

### Identification

Trichloro acetic acid anhydride  
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 CAS [4124-31-6]  
 BRN 980355

### Specifications

>= 95%,  
 Typical quality >98% (GC)

### Properties

Moisture sensitive  
 Molecular weight . . . . . 308.76  
 Density . . . . . 1.69 g/ml 25°C  
 Boiling point . . . . . 139 – 141°C/60 Torr

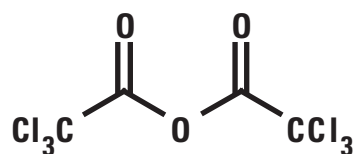
### Safety & Handling

R 35  
 S 26-36/37/39-45  
 UN 3265 8/PG 2

### References

1. M. Hojo et al., Chem. Lett., 1976, 499
2. S. Oishi et al., J. Org. Chem. 67 (2002), 1361
3. S. Buscemi et al. J. Org. Chem. 67 (2002), 6253
4. O. Miyata et al. Org. Biomol. Chem. 1 (2003), 254
5. M.-L. Bannasar et al. Tetrahedron: Asymmetry 14 (2003), 469
6. R. Beaudegnies et al. Heterocycles 60 (2003), 2417
7. G. C. Condie et al. Eur. J. Org. Chem. (2004), 1286
8. M.-L. Bannasar et al. Tetrahedron 60 (2004), 6785
9. Y. Yamamoto et al., J. Am. Chem. Soc. 126 (2004), 5962
10. S. Anjum et al. Tetrahedron 61 (2005), 4793
11. A. L. Gill et al. J. Med. Chem. 48 (2005), 414
12. Patent US 2,671,085
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14. Patent WO 00/10975

## Coupling, Dehydration and Functionalization Trichloroacetic Acid Anhydride



Trichloroacetic acid anhydride (TCAA) has proven to be a very versatile compound in a number of applications.

Being free from fluorine, TCAA avoids the issues typically associated with trifluoro acetic anhydride, i.e. fluoride in waste stream or hydrogen fluoride formation in incinerators.

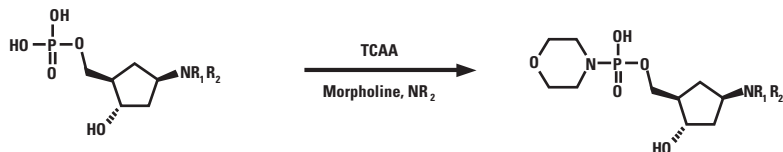
TCAA is conveniently used for example in:

- **Coupling reactions** by serving as a dehydrating (water removing) reagent;
- **Activating esters** and **Protecting** alcohols and amines under very mild conditions;
- **Easy Functionalization** by clean and easy access to the trichloroacetyl moiety which can then be further transformed. Trichloroacetates typically convert easier than acetates;
- **Syntheses of Heterocycles** like benzofurans, isatins, oxazoles, oxadiazoles or triazines by serving as a building block.

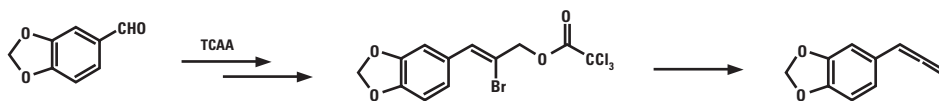
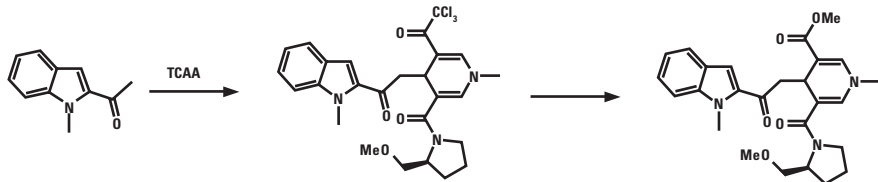
TCAA is now available from Archimica in commercial quantities and is also offered in tailor-made delivery forms upon request, e.g. solution in a solvent of choice.

## Applications

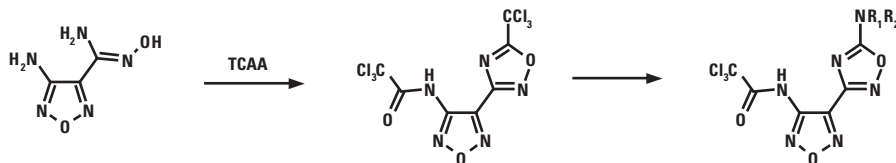
### Coupling



### Functionalization



### Heterocycle synthesis



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Regional contacts are given at [www.archimica.com](http://www.archimica.com)